

Agency Use

Permit No.:

MTGO/014

Date Rec'd

V3/11

Rec'd By

WATER PROTECTION BUREAU

READ THIS BEFORE COMPLETING FORM: Before completing this form (Form NMP), Concentrated Animal Feeding Operation (CAFO) operators need to read the General Permit, particularly Part IV.A. CAFO operators also need to read the "Instructions For Filling Out Form NMP," found at the back of the Form. Form NMP is intended to help CAFO operators develop a site-specific Nutrient Management Plan, in compliance with Part IV.A of the General Permit and all

FORM NMP

### Nutrient Management Plan

applicable State rules and statutes. Your Nutrient Management Plan must be maintained at the site as required in Part III of the General Permit. Sections B and C on your Form NMP must state the information exactly the same way as it was stated on the most recently submitted version of your Form 2B. Attach additional pages as necessary, indicating the corresponding section number on this NMP form. For additional help in filling out this form please read the attached instructions. The 2008 General Permit, current fee schedule, and related forms are available from the Water Protection Bureau at (406) 444-3080 or <a href="http://www.deq.mt.gov/wqinfo/MPDES/CAFO.asp">http://www.deq.mt.gov/wqinfo/MPDES/CAFO.asp</a>	: 
Section A - NMP Status (Check one):	
New No prior NMP submitted for this site.	
Modification Change or update to existing NMP.	
Permit Number: MTGQ1Q214 (Specify the permit number that was previously assigned to your facility.)	
Section B - Facility or Site Information:	RESON
Site Name Square Butte Land & Cattle Company Feedlots	
Site Location N/25E/4, Section 24, TIBN, RIJE, M.P.M.	
Nearest City or Town Denton County Fergus	
Section C - Applicant (Owner/Operator) Information:	
Owner or Operator Name Square Butte Land & Cattle Company, LLC	
Mailing Address 4801 East Broadway Blvd., Suite 501	
City, State, and Zip Code Tuscon, AZ 85711	
Phone Number (703) 999-7569 5000h 2000-5 #	

RECEIVED

2105 & @ NAL

DEOMPB PERMITTING & COMPLIANCE DIV.

1. Livestock Statistics	Participant of the Association of the Control of th	
Animal Type and number of animals	# of Days on Site (per ye	ear) Annual Manure Production (tons, cu. yds.or gal)
1. Beef Calves: 99	175 (2009-2	1/100
2. Bect Calves: 155	179 (2010-20	011) 992,6 tons
3.		
4.		
5.		
6.       7.		
8.		
Method used for estimating annual manure production:		
DEQ Circular #9	· · · · · · · · · · · · · · · · · · ·	
Ave. Weight 675 x. 10	06 × (= of days/zoco)	x #of cattle
2. Manure Handling  Describe manure handling at the facility:		
Monure is piled into moutofor at least 120 days.	inds. It is to	hen let sit
applied.		
1		
Frequency of Manure Removal from confinement areas:	han annual bas	às because
there have not been many anim		are ever more
		twice a year.
Is this manure temporarily stored in any location other the f so then how and where?	han the confinement area?	Yes No
	· · · · · · · · · · · · · · · · · · ·	
	i	
s manure stored on impervious surface?  Yes fyes, describe type and characteristics of this surface:	]No N/A	

			`	A PERSONAL PROPERTY LINE OF THE PERSON WAS A PROPERTY OF THE PERSON OF T
Waste Control Structure (name/typ	e) Length (ft)	Wielth (ft)	Depth (ft)	Volume (cubic ft or gallons)
1. Control Dikes				
2. Dilch				
3.				
4.				
5.				
6.				
7.				
8.		·		
9.			·	
10.				
11.				
12.				
Describe how dead animals are disposed animals are	e remov	ed from	the the	site within
Dood animals are	e remov	ed from	the roperly	site within disposed of.
Dood animals ar	e remov	ed from	the roperly	site within disposed of.
Dead animals and 24 hours where  5. Clean Water Diversion Practice Describe how clean water is diverted  A grassy swale	e remove by they s I from production	on area:	are loca	ted next to uphill side,
Dead animals and 24 hours where  5. Clean Water Diversion Practice. Describe how clean water is diverted.  A grassy swale the road that a	e remove by they s I from production	on area:	are loca	

. Waste Control Structures				The second second second second second		
Vaste Connol Structure (name/	type). Length (fit)	Width (ft)	Depth (ft)	<i>Kolume</i>	(cubic ft o	r gallon
Control Dikes	0		(Comp.)	and 2 Bestine		
· West	680'	6'	2.5	<u>95,</u>	<u> 383</u>	gal.
- Center	660'	6'	2.5	92.	577	991.
- East	400'	6	2.5'	<u>56</u> ,	108	gal.
Natural Pit	80'	60'	3′	<u>53,</u>	863	99/.
140,10,101			٠			
•						
0.						
1.						
2.						
Disposal of Dead Animals escribe how dead animals are dis	sposed of at this fac	cility:				
Disposal of Dead Animals	sposed of at this fac	cility:				
Disposal of Dead Animals	sposed of at this fac	cility:				
Disposal of Dead Animals	sposed of at this fac	cility:				
Disposal of Dead Animals	sposed of at this fac	cility:				
Disposal of Dead Animals	sposed of at this fac	cility:				
Disposal of Dead Animals escribe how dead animals are disconnected to the Diversion Practi	ces					
Disposal of Dead Animals escribe how dead animals are disconnected to the Diversion Practi	ces					
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Disposal of Dead Animals escribe how dead animals are disconnected to the Diversion Practi	ces					
Disposal of Dead Animals escribe how dead animals are disconnected to the Diversion Practi	ces					
Disposal of Dead Animals	ces					

6. Prohibiting Animals and Wastes 1. In Contact with State Waters  Describe how animals and wastes are prohibited from direct contact with state waters:
Animals are restricted and confined by fences.
MINUMAIS ONE TESMONO ONLY CONTROLLY BY
7. Chemicals and Contaminants  Describe how chemicals and other contaminants are handled on-site:
Ivermection Pour-On (pesticide) is applied to cattle under a
covered working facility. Empty containers are removed from
the site and disposed of by burning. Mediated feeds are
stored in hopper bottom bins a delivered to feed bunks
doile
<u>vary</u>
8. Best Management Practice (BMPS)  Describe in detail all temporary, permanent and structural Best Management Practices (BMPs) which will be used to control runoff of pollutants from facility's production area. Indicate the location of these measures. Include a schedule for implementation of each of these measures. Examples of BMP measures could include but are not limited to: constructing ditches, terraces, and waterways above an open lot to divert clean water run on; installing gutters, downspouts and buried conduits to divert roof drainage; providing more roofed area; decreasing open lot surface area; repairing or adjusting water systems to minimize water wastage; using practical amounts of water for cooling purposes; recycling water if practical and applicable.  Three dikes are constructed on the down-hill side which
collect rumoff during times of very excessive moisture. That
then runs into an old ditch which continues running east. Very
rarely will water actually reach this ditch. Water is on a
float system is checked daily to prevent freezing or waste. There are also large grass biffers that separate fields where Manureis applied or runoff from state waters. Cattle are mainly
There are also large grass buffers that separate incommerce
Manureis applied or runotf from state waters, cattle are mainly
kept during the winter which reduces dust a odor. There is
also less sumoff during the winter months

6. Prohibiting Animals and Wastes from Contact with State Wate Describe how animals and wastes are prohibited from direct contact w	rs vith state waters:	
peserio de la manda de la mand		
7. Chemicals and Contaminants		
Describe how chemicals and other contaminants are handled on-site:		
Describe in detail all temporary, permanent and structural Best Managused to control runoff of pollutants from facility's production area. In Include a schedule for implementation of each of these measures. Example are not limited to: constructing ditches, terraces, and waterways above installing gutters, downspouts and buried conduits to divert roof drains decreasing open lot surface area; repairing or adjusting water systems amounts of water for cooling purposes; recycling water if practical and Three dikes are constructed on the country stated in section (D(3). There is also a natural provided in section (D(3). There is also a natural provided in section. That depression is grass averal and is any water source. All pens in the west one in with grass and alfalfa due to light usage. To the vegetation will standard of the vegetation will standard dained in this application is far less than Cattle and he rotated. Water is on a float surprevent freezing or waste. There are also all manure spread fields from natural water, Coall manure spread fields from natural water for coal manure spread fields from natural water for construction fields from natural water for coall manure spread fi	indicate the location of these in imples of BMP measures could an open lot to divert clean water age; providing more roofed and to minimize water wastage; us applicable.  It to collect runoff. I it to collect runoff. I it would run into a large buffer be a large buffer by an a large buffer by an a large buffer as the facility can be team a is checked do the are kept during the are ke	include but ater run on; ea; sing practical  A the later of winter
which reduces dust a odor. There is also les	s runoff ouring w	inter
months.		

Describe in detail all temporary, permanent used to control runoff of pollutants from factorices. If not already in use, include a soldetails and specifications may be used to sufficient but are not limited to: maintaining sirrigation practices to prevent ponding of was frozen ground; consulting with the Departm ground; applying wastes at agronomic rates.	ility's land appled the dule for implement this detected by the detected by th	plication area. Indicate the location of the lementation of each of these measures. Att lescription. Examples of BMP measures courface waters for manure applications; manual application sites; never spray irrigating varies.	se ached ould aging vastes onto
Plant sampling/tissue analysis	yes no	Rotational grazing	yes/fio
Conservation or reduced tillage	(ves/no	Manure injection or incorporation	yes/no
Terraces or other water control structures	yes/no	Contour plantings	yes/no)
Riparian buffers or vegetative filter strips	yes/no	Winter "scavenger" or cover crops	yes (no
Other examples			
9. Implementation, Operation, Maintenan	nce and Record	d Keeping – Guidance	
The permittee is required to develop guidant maintenance of the facility, and record keep Has a guidance document been developed for Certify the document addresses the followin Implementation of the NMP:  Facility operation and maintenance:  Yes Record keeping and reporting:  Sample collection and analysis:  Yes Manure transfer:  Yes  Provide name, date and location of most rec	ing as described or the facility?    In grequirements    No    No	d in Part II of the permit.  Yes No	
Frovide name, date and location of most rec	ent documentar	iiOii.	
If your answer to any of the above question  After implementation of the above question after th	is no, provide e		hly

Section E - Land Application  Will manure be land applied to land either owned, rented, or leased by the owner or operator of the facility?  No If no, then provide an explanation of how animal waste at this site are managed.  Yes If yes, then the information requested in Section E must be provided.
Photos and/or Maps  Attach an aerial photograph or map of the site where manure is to be applied. (Use multiple photos/maps if necessary to show required details.) The photo(s)/map(s) must be printed on no larger than an 11"x17" piece of paper, and must clearly identify the following items:  Individual field boundaries for all planned land application areas  A name, number, letter or other means of identifying each individual land application field  The location of any down-gradient surface waters  The location of any down-gradient open tile line intake structures  The location of any down-gradient sinkholes  The location of any down-gradient agricultural well heads  The location of all conduits to surface waters  The specific manure/waste handling or nutrient management restrictions associated with each land application field.  The soil type(s) present and their locations within the individual land application field(s)  The location of buffers and setbacks around state surface waters, well heads, etc.
Land Application Equipment Calibration  Describe the type of equipment used to land apply wastes and the calibrating procedures:  Custom spreaders will be used; manuse will be tested as will the Soil to determine the application rate for each field; the spreader will calibrate their matrix.  Manure Sampling and Analysis Procedures and use a gas when applying.  A representative manure sample will be analyzed a minimum of once annually for Total Nitrogen, and Total Phosphorus. Analysis results will be reported in lbs/ton or lbs/1,000 gal. Results of these analyses will be used in determining application rates for manure, litter, and process wastewater.
Manure Sample collection will occur according to the following method:
The recommended method(s) found in Section 5 of Department Circular DEQ 9
Other (describe)
Soil Sampling and Analysis Procedures  A representative soil sample from the top 6 inch layer of soil in each field will be analyzed for phosphorus content at least once every five years. Analyses will be conducted by a qualified laboratory, using the Olsen P test. Results will be reported in parts per million (ppm) and will be used in determining application rates for manure, litter, and process wastewater.  Soil sample collection will occur according to the following method:  The recommended method(s) found in Section 5 of Department Circular DEQ 9  Other (describe)

Each site category's weighting factor in TABLE 3 is multiplied by the site risk rating (value) to get a weighted risk value. All categories are rated (according to individual category instructions), and the overall rating is the sum of all values. After individual sites/fields are rated, refer to the appropriate vulnerability rating in Table 4.

SITE CATEGORY FACTOR	NONE (0)	LOW (1)	MEDIUM (2)	нібн (4)	VERY HIGH (8)	RISK VALUE (0,1,2,4,8)	WEIGHT FACTOR	WEIGHTED RISK FACTO
Soil Erosion	N/A	<5 ton/ac/yr	5-10 tons/ac/yr	10-15 tons/ac/y	>15 tone/ac/yr	7	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tailwater recovery, QS >6 very erodible soils, or QS >10 other soils	QS >10 for erosdion resistant soils	QS >10 for erodible soils	QA >6 for very erodible soils	0	X 1.5	0
Sprinkler Irrigation Erosion	All sites 0-3% slope, all sandy sites, or site evaluation indicates little or no runoff, large spray on sits 3-8%	Medium spray on slity solis 3-15% slopes, targe spray on silfy solis 8-15% slope low spray on slit solis 3-8%,large spray on clay soil 3-15% slope	Medium spray on clay soils 3-8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	Medium spray on clay soils >8% slope, low spray on clay soil 3- 8% slope, low spray on slity soils >15% slopes	Low apray on clay soils >8% slopes.	0	X 0.5	0
Runoff Class	Negligible	Very Low or low	Medium	High	Very High	2	X 0.5	1.0
Bray P1 Soil Fest P	***	<30 ppm	30-60 ppm	60-120 ppm	>120 ppm		X 1.0	
Dison Soil Fest P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1	X 1.0	1.0
Commercial P Fertilizer Application Method	None Applied	Placed with planter or injected deeper than 2 inches.	Incorporated <3 months prior to planting or surface applied during the growing season.	Incorporated >3 months before crop or surface applied <3 months before crop emerges.	Surface applied >3 months before crop emerges.	0	X 1.0	0
Commercial P Fertilizer Application Aethod	Non <del>e</del> Applied	Placed with planter or injected desper than 2 inches.	incorporated <3 months prior to planting or surface applied <3 months before crop.	Incorporated >3 months before crop or surface applied <3 months before crop.	Surface applied >3 months before crop emerges.	0	X 1.0	0
Commercial P ertilizer application Rate	None Applied	<30 lbs/ac P <sub>2</sub> O <sub>5</sub>	31–90 ibs/ac P₂O₅	91150 lbs/ac P <sub>2</sub> O <sub>5</sub>	>150 lbs/ac P <sub>2</sub> O <sub>5</sub>	0	X 1.0	0
Organic P Source opplication fethod	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season.	Incorporated >3 months before crop or surface applied < 3 months before crop emerges.	Surface applied to pasture or >3 months before crop emerges.	0	X 1.0	0
organic P pplication tate	None Applied	<30 lbs/ac P <sub>2</sub> O <sub>5</sub>	31-90 lbs/ac P <sub>3</sub> O <sub>1</sub>	91–150 lbs/ac P <sub>2</sub> O <sub>5</sub>	>150 lbs/ac P <sub>2</sub> O <sub>6</sub>	0	X 1.0	0
listance to concentrated surface Water low	>1,000 feet	200-1000 feet, or functioning grasses waterways in concentrated surface water	100–200 feet	<100 feet	O feet or applications are directly into concentrated surface water flow areas.	0	X 1.0	0

Organic P

Source Application Method

Organic P

Application Rate

Distance to

Flow

Concentrated

Surface Water

None

None

Applied

>1,000

feet

Applied

Each site category's weighting factor in TABLE 3 is multiplied by the site risk rating (value) to get a weighted risk value. All categories are rated (according to individual category instructions), and the overall rating is the sum of all values. After individual sites/fields are rated, refer to the appropriate vulnerability rating in Table 4.

SITE CATEGORY FACTOR	NONE (0)	LOW (1)	MEDIUM (2)	́нівн (4)	VERY HIGH (8)	RISK VALUE (0,1,2,4,8)	WEIGHT FACTOR	WEIGHTED RISK FACTO
Soil Erosion	N/A	<5 ton/ac/yr	5-10 tons/ac/yr	10-15 tons/ac/y	>15 tons/ac/yr	/	X 1.5	1.5
Furrow Irrigation Erosion	N/A	Tailwater recovery, QS >6 very erodible soils, or QS >10 other soils	QS >10 for erosdion resistant soils	QS >10 for erodible soils	QA >6 for vary erodible soils	0	X 1.5	0
Sprinkler Irrigation Erosion	All sites 0-3% slope, all sandy sites, or site evaluation indicates little or no runoff, large spray on sitts 3-8%	Medium spray on sity soils 3-15% slopes, large spray on silty soils 8-15% slope low spray on silt soils 3-8%,large spray on clay soil 3-15% slope	slope, medium spray on silt soil	Medium spray on clay soils >8% slope, low spray on clay soil 3- 8% slope, low spray on slity soils >15% slopes	Low spray on clay soils >8% slopes.	0	× 0.5	0
Runoff Class	Negligible	Very Low or low	Medium	High	Very High	2	X 0.5	1.0
Bray P1 Soil Test P	***	<30 ppm	30-60 ppm	60-120 ppm	>120 ppm		X 1.0	
Olson Soil Teat P	-	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	1	X 1.0	1.0
Commercial P Fertilizer Application Method	None Applied	Placed with planter or injected deeper than 2 inches.	incorporated <3 months prior to planting or surface applied during the growing season	Incorporated >3 months before crop or surface applied <3 months before crop emerges.	Surface applied >3 months before crop emerges.	0	X 1.0	0
Commercial P Fertilizer Application Method	None Applied	Placed with planter or injected deeper than 2 inches.	incorporated <3 months prior to planting or surface applied <3 months before crop.	Incorporated >3 months before crop or surface applied <3 months before crop.	Surface applied >3 months before crop emerges.	0	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P <sub>2</sub> O <sub>5</sub>	31-90 lbs/ac P <sub>2</sub> O <sub>5</sub>	91-150 lbs/ac P <sub>2</sub> O <sub>5</sub>	>150 lbs/ac P <sub>2</sub> O <sub>5</sub>	0	X 1.0	0

Incorporated >3

months before

crop or surface

months before

crop emerges.

91-150 lbs/ac

P<sub>2</sub>O<sub>8</sub>

<100 feet

applied < 3

Incorporated <3

months prior to planting or

surface applied

during growing

31-90 lbs/ac

100-200 feet

P<sub>2</sub>O<sub>6</sub>

season.

Surface applied

to pasture or >3

months before

crop emerges.

>150 lbs/ac

0 feet or

P<sub>2</sub>O<sub>5</sub>

applications are

directly into

concentrated

surface water

0

0

0

Injected

deeper than 2

inches

<30 lbs/ac

P<sub>2</sub>O<sub>5</sub>

200-1000 feet,

or functioning

waterways in

concentrated

gresses

0

0

X 1.0

X 1.0

X 1.0

Each site category's weighting factor in TABLE 3 is multiplied by the site risk rating (value) to get a weighted risk value. All categories are rated (according to individual category instructions), and the overall rating is the sum of all values. After individual sites/fields are rated, refer to the appropriate vulnerability rating in Table 4.

SITE CATEGORY FACTOR	NONE (0)	. LOW (1)	MEDIUM (2)	MAP #	VERY HIGH (8)	RISK VALUE (0,1,2,4,8)	WEIGHT FACTOR	WEIGHTED RISK FACTOR
Soil Erosion	N/A	<5 ton/ac/yr	5-10 tona/ac/yr	10-15 tons/ac/y	>15 tons/ac/yr	/	X 1.5	115
Furrow Irrigation Erosion	N/A	Tailwater recovery, Q\$ >6 very erodible soils, or Q\$ >10 other soils	QS >10 for eroadion resistant soils	QS >10 for erodible soils	QA >6 for very erodible soils	0	X 1.5	0
Sprinkler Irrigation Erosion	All sites 0-3% slope, all sandy sites, or site evaluation indicates little or no runoff, large spray on sitts 3-8%	Medium spray on slity soils 3-15% slopes, large spray on silty soils 8-15% slope low spray on silt soils 3-8%, large spray on clay soil 3-15% slope	slope, medium spray on silt soll	Medium spray on clay soils >8% slope, low spray on clay soil 3- 8% slope, low spray on slity soils >15% slopes	Low spray on clay solls >8% slopes.	0	X 0.5	0
Runoff Class	Negligible	Very Low or low	Medium	High	Very High	2	X 0.5	1:0
Bray P1 Soil Test P	***	<30 ppm	30-60 ppm	60-120 ppm	>120 ppm		X 1.0	
Oison Soil Test P	***	<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	/	X 1.0	10
Commercial P Fertilizer Application Method	None Applied	Placed with planter or injected deeper than 2 inches.	Incorporated <3 months prior to planting or surface applied during the growing season.	Incorporated >3 months before crop or surface applied <3 months before crop emerges.	Surface applied >3 months before crop emerges.	0	X 1.0	0
Commercial P Fertilizer Application Method	None Applied	Placed with planter or injected deeper than 2 inches.	incorporated <3 months prior to planting or surface applied <3 months before crop.	incorporated >3 months before crop or surface applied <3 months before crop.	Surface applied >3 months before crop emerges.	0	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P <sub>2</sub> O <sub>5</sub>	31–90 lbs/ac P <sub>2</sub> O <sub>5</sub>	91–150 lbs/ac P₂O₅	>150 lbs/ac P <sub>2</sub> O <sub>5</sub>	0	X 1.0	0
Organic P Source Application Method	None Applied	Injected deeper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season.	incorporated >3 months before crop or surface applied < 3 months before crop emerges.	Surface applied to pasture or >3 months before crop emerges.	0	X 1.0	0
Organic P Application Rate	None Applied	<30 lbs/ac P <sub>2</sub> O <sub>5</sub>	31-90 ibs/ac P <sub>2</sub> O <sub>5</sub>	91-150 lbs/ac P <sub>2</sub> O <sub>5</sub>	>150 lbs/ac P <sub>2</sub> O <sub>6</sub>	0	X 1.0	0
Distance to Concentrated Surface Water Flow	>1,000 feet	200-1000 feet, or functioning grasses waterways in concentrated surface water	100-200 feet	<100 feet	O feet or applications are directly into concentrated auriace water flow areas.	0	X 1.0	0

Each site category's weighting factor in TABLE 3 is multiplied by the site risk rating (value) to get a weighted risk value. All categories are rated (according to individual category instructions), and the overall rating is the sum of all values. After individual sites/fields are rated, refer to the appropriate vulnerability rating in Table 4.

SITE CATEGORY FACTOR	MONE (0)	LOW (1)	MEDIUM (2)	MAP T	VERY HIGH (8)	RISK VALUE (0,1,2,4,8)	WEIGHT FACTOR	WEIGHTED RISK FACTOR
Soil Erosion	N/A	<5 ton/ac/yr	5-10 tona/ac/yr	10-15 tons/ac/y	>15 tons/ac/vr	,,,,,,,,,	X 1.5	1,5
Furrow Irrigation Erosion	N/A	Tailwater recovery, QS >6 very erodible soils, or QS >10 other soils	QS >10 for eroadion resistant soils	Q5 >10 for erodible soils	QA >6 for very erodible soils	0	X 1.5	0
Sprinkler Irrigation Erosion	All sites 0-3% slope, all sandy sites, or site evaluation indicates little or no runoff, large spray on sitts 3-8%	Medium spray on slity soils 3-15% slopes, large spray on silty soils 8-15% slope low spray on slit soils 3-8%, large spray on clay soil 3-15% slope	Medium spray on clay soils 3-8% slopes, large spray on clay soils >15% slope, medium spray on silt soil >15% slope	Medium spray on clay solis >8% slope, low spray on clay soli 3- 8% slope, low spray on slity solis >15% slopes	Low sprayon clay solls >8% slopes.	0	× 0.5	0
Runoff Class	Negligible	Very Low or low	Medium	High	Very High	2	X 0.5	1.0
Bray P1 Soil Teat P	***	<30 ppm	30-60 ppm	60-120 ppm	>120 ppm		X 1.0	
Olson Soil Teat P		<20 ppm	20-40 ppm	40-80 ppm	>80 ppm	<i>i</i>	, X 1.0	1.0
Commercial P Fertilizer Application Method	None Applied	Placed with planter or injected deeper than 2 inches.	Incorporated <3 months prior to planting or surface applied during the growing season.	Incorporated >3 months before crop or surface applied <3 months before crop emerges.	Surface applied >3 months before crop emerges.	0	X 1.0	0
Commercial P Fertilizer Application Method	None Applied	Placed with planter or injected deeper than 2 inches.	incorporated <3 months prior to planting or surface applied <3 months before crop.	incorporated >3 months before crop or surface applied <3 months before crop.	Surface applied >3 months before crop emerges.	0	X 1.0	0
Commercial P Fertilizer Application Rate	None Applied	<30 lbs/ac P₂O₅	31–90 lbs/ac P <sub>2</sub> O <sub>5</sub>	91–150 lbs/ac P <sub>2</sub> O <sub>5</sub>	>150 lbs/ac P <sub>2</sub> O <sub>5</sub>	0	X 1.0	0
Organic P Source Application Aethod	None Applied	Injected desper than 2 inches	Incorporated <3 months prior to planting or surface applied during growing season.	Incorporated >3 months before crop or surface applied < 3 months before crop emerges.	Surface applied to pasture or >3 months before crop emerges.	0	X 1.0	0
Organic P Application Rate	None Applied	<30 lbs/ac P₂O₅	31–90 lbs/ac P₂Os	91–150 lbs/ac P <sub>2</sub> O <sub>5</sub>	>150 lbs/ac P <sub>2</sub> O <sub>6</sub>	0	X 1.0	0
Distance to Concentrated Surface Water Tow	>1,000 feet	200-1000 feet, or functioning grasses waterways in concentrated surface water	100–200 feet	<100 feet	D feet or applications are directly into concentrated surface water flow areas.	0	X 1.0	0

Land Application Data-Narrative approach

The following must be filled out <u>for each field</u> to which manure, litter or process wastewater will or may be applied for the period of the permit (5 years). Use as many sheets as necessary to fulfill this requirement. <u>Fields</u> with identical crops and soil types may be grouped together.

Crops and Manure	
Field Name and spreadable acres for each (for fields)	The state of the s
	acres with 0-4% slope
(2 hst of Sale BARN)	
Crop 1 (year 1 or ?) plant species	40% AlfAKA/80% Chestolyheat GRASS
Irrigated (Y/N)	40% Alfaka/ 80% Chestowheat GRASS
Yield Goal (ton/ac or bushel/ac)	21/2 TON
N Content of soil as nitrate (lbs/acre or ppm)	12 ppm
P Content of soil as P <sub>2</sub> O <sub>5</sub> (lbs/acre or ppm)	15 ppm
Time of Year When Application will Occur (month)	August
Application frequency (per year by month)	1 Annual application in August
Form of manure (liquid/solid)	Solid
Method of Application	Sprinkling
Is manure incorporated or broadcast?	Brondenst
Frequency of Application (yearly, biannual, etc.?)	yenely
Crop 2	
Irrigated (Y/N)	
Yield Goal (ton/ac or bushel/ac)	
N Content of soil as Nitrate (lbs/acre or ppm)	
P Content of soil as P <sub>2</sub> O <sub>5</sub> (lbs/acre or ppm)	
Time of Year When Application will Occur (month)	
Application frequency (per year, by month)	
Form of manure (liquid/solid)	
Method of Application	
Is manure broadcast, injected or incorporated?	
Frequency of Application (Annual, Biannual, ,etc?)	

d) The permittee will complete the *Nutrient Budget Worksheet*, below, for each crop grown on each field to which manure or process waste water is or may be applied during the first year of application. A copy of each Nutrient Budget Worksheet will be maintained on site, and a copy will be submitted to the Department.

Site/Field.	MAP#10 Field 2		
	Nutrient Budget	Nitrogen-based Application	Phosphorus-based Application
	Crop Nutrient Needs, lbs/acre included in Department Circular DEQ 9	55 lbs/Acre 40 lbs/Acre	
-)	Credits from previous legume crops, lbs/acre (from DEQ-9), as applicable	40 lbs/Acre	
-)	Residuals from past manure production, lbs/acre (lbs/acre applied in previous year(s) x fractions listed in DEQ-9)	0	
-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre	0	
-)	Nutrients supplied in irrigation water, lbs/acre	0	
	= Additional Nutrients Needed, lbs/acre	1516S/ACRE	
	Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1,000 gal (from manure test)	20lbs/ton	
x)	Nutrient Avalability factor (for Nitrogen based application see DEQ-9, below; for Phosphorus based application use 1.0)	20/bs/ton .75 15/bs/ton	
	= Available Nutrients in Manure, lbs/ton or lbs/1,000 gal	15 165/tow	
		1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
	Additional Nutrients needed, lbs/acre (calculated above)	15 lbs/ton	
<u>'</u>	Available Nutrients in Manure, lbs/ton or lbs/1,000 gal (calculated above)	15 lbs/ton 15 lbs/ton Iton/ACRE	
	= Manure Application Rate, tons/acre	Ital Incop	
1 - January - 4	or 1,000 gal/acre	1100 / REKE	
Comments:	an Olson P Soil test &	1 15 ppm - MA	inure will be
apple	ed to meet N needs of	hay	
F!		1	
-			
			: '

Land Application Data-Narrative approach

The following must be filled out <u>for each field</u> to which manure, litter or process wastewater will or may be applied for the period of the permit (5 years). Use as many sheets as necessary to fulfill this requirement. <u>Fields</u>

with identical crops and soil types may be grouped together.

Field Name and spreadable acres for each (for fields v	
MAP# 16 Fields 8#9 45	18 acres with 2-4% slope
Crop 1 (year 1 or ?) plant species	10% Alfalfa /90% CRESTER wheat 9 RA
Irrigated (Y/N)	No
Yield Goal (ton/ac or bushel/ac)	21/2 TON
N Content of soil as nitrate (lbs/acre or ppm)	21/2 TON 20 ppm
P Content of soil as P <sub>2</sub> O <sub>5</sub> (lbs/acre or ppm)	12 ppm
Time of Year When Application will Occur (month)	August
Application frequency (per year by month)	I Annual application in Aggust
Form of manure (liquid/solid)	Solid
Method of Application	Sprinkling
Is manure incorporated or broadcast?	Sprinkling Brondonst
Frequency of Application (yearly, biannual, etc.?)	yearly
Crop 2	
Irrigated (Y/N)	
Yield Goal (ton/ac or bushel/ac)	
N Content of soil as Nitrate (lbs/acre or ppm)	
P Content of soil as P <sub>2</sub> O <sub>5</sub> (lbs/acre or ppm)	
Time of Year When Application will Occur (month)	
Application frequency (per year, by month)	
Form of manure (liquid/solid)	
Method of Application	
Is manure broadcast, injected or incorporated?	
Frequency of Application (Annual, Biannual, ,etc?)	

### Phosphorus Risk Assessment

The permittee shall assess the risk of phosphorus contamination of state waters. An assessment shall be conducted for each field, under the control of the operator, to which manure, litter or process wastewater will or may be applied. If a new field is added in the future, then the permittee must submit a revised (modified) NMP. The permittee has the option of using either Method A or Method B (below) to complete the assessment. Copies of all tables and calculations used to complete the assessments, as well as the results of the assessments, shall be submitted to the Department and copies shall be maintained on-site at the facility and available for Departmental review. The results of the assessments shall be used to determine the appropriate basis for land application of wastes from the facility.

M	oth	od	Tie	ha
IVE			-	

Ind	icate v	vhich	method	will be	used to	determine	phosphorus	application:
X	Metho	od A -	- Repres	entativ	e Soil S	ample		

☐ Method B – Phosphorus Index

### Method A - Representative Soil Sample

a) Obtain one or more representative soil sample(s) from the field.

b) Have the sample analyzed for Phosphorus by a qualified lab. The "Olsen P test" must be used for the analysis, and the result must be reported in parts per million (ppm).

c) Using the results of the Olsen P test, determine the application basis according to the Table below

Soil Test	
Olsen P Soil Test Result (ppm)	Application Basis
<25.0	Nitrogen Needs Of Crop
25.1 - 100.0	Phosphorus Needs Of Crop
100.0 - 150.0	Phosphorus Needs up to Crop Removal Rate
>150.0	No Application

### Method B – Phosphorus Index

- a) Complete a Phosphorus Index according to for each crop grown on each field. Complete table in Appendix A to calculate phosphorus index. For information on filling out specific sections Appendix A, please refer to Attachment 2 of Department Circular DEQ 9.
- b) Using the calculated Total Phosphorus Index Value, assign the overall site/field vulnerability to phosphorus loss according to the table below.

Total Phosphorus	
Total Phosphorus Index Value	Site Vulnerability to Phosphorus Loss
<11	Low
11-21	Medium
22-43	High
>43	Very High

c) Using the calculated Site Vulnerability to Phosphorus Loss, determine the appropriate application basis according to the table below.

Site Vulnerability to Phosphorus Loss	
Site Vulnerability to Phosphorus Loss	Application Basis
Low	Nitrogen Needs
Medium	Nitrogen Needs
High	Phosphorus Need Up to Crop Removal
Very High	Phosphorus Crop Removal or No Application

d) The permittee will complete the *Nutrient Budget Worksheet*, below, for each crop grown on each field to which manure or process waste water is or may be applied during the first year of application. A copy of each Nutrient Budget Worksheet will be maintained on site, and a copy will be submitted to the Department.

	udget Worksheet	1	
Site/Field:	Map#16 Fields 8+9 Nutrient Budget		
2 (1) (2) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	Nutrient Budget	Nitrogen-based Application	Phosphorus-based Application
	Crop Nutrient Needs, lbs/acre included in		
	Department Circular DEQ 9	75 Ibstace	
(-)	Credits from previous legume crops,	75 Ibs/acre 40 Ibs/acre	
(-)	lbs/acre (from DEQ-9), as applicable	40 lbs/Acre	
(-)	Residuals from past manure production,		
( )	lbs/acre (lbs/acre applied in previous		
	year(s) x fractions listed in DEQ-9)	0	
(-)	Nutrients supplied by commercial		
	fertilizer and Biosolids, lbs/acre	0	,
(-)	Nutrients supplied in irrigation water,		·
	lbs/acre	0	
	= Additional Nutrients Needed, lbs/acre	35 lbs/Acre	
	Total Nitrogen and Phosphorus in manure,		
	lbs/ton or lbs/1,000 gal (from manure test)	20 lbs/ton	
(x)	Nutrient Avalability factor (for Nitrogen		
•	based application see DEQ-9, below; for	• 7 ,	
	Phosphorus based application use 1.0)	075	
	= Available Nutrients in Manure,	in 11	
	lbs/ton or lbs/1,000 gal	15 lbs/ton	
12 E			
	Additional Nutrients needed, lbs/acre	7-11/	
	(calculated above)	35 lbs/Acre	,
(/)	Available Nutrients in Manure, lbs/ton or	100	
	lbs/1,000 gal (calculated above)	15 105/AERE	
	= Manure Application Rate, tons/acre	35 lbs/Acre 15 lbs/Acre 2.33 Tors/Acre	
	or 1,000 gal/acre	21) I TOPS HORE	
Comments:			
•			

Land Application Data-Narrative approach

The following must be filled out <u>for each field</u> to which manure, litter or process wastewater will or may be applied for the period of the permit (5 years). Use as many sheets as necessary to fulfill this requirement. <u>Fields</u>

with identical crops and soil types may be grouped together.

Crops and Manure	
Field Name and spreadable acres for each (for fields)  MAD # 5 Field   87	
West CRP	
Crop 1 (year 1 or ?) plant species	40% Alfaka/60% CRASS.
Irrigated (Y/N)	No
Yield Goal (ton/ac or bushel/ac)	21/2 TONS
N Content of soil as nitrate (lbs/acre or ppm)	2/2 TONS 20 ppm
P Content of soil as P <sub>2</sub> O <sub>5</sub> (lbs/acre or ppm)	12 ppm
Time of Year When Application will Occur (month)	August
Application frequency (per year by month)	1 Annual application in August
Form of manure (liquid/solid)	Solid
Method of Application	
Is manure incorporated or broadcast?	Sprinkling Broadcast
Frequency of Application (yearly, biannual, etc.?)	yearly
Crop 2	
Irrigated (Y/N)	
Yield Goal (ton/ac or bushel/ac)	
N Content of soil as Nitrate (lbs/acre or ppm)	
P Content of soil as P <sub>2</sub> O <sub>5</sub> (lbs/acre or ppm)	
Time of Year When Application will Occur (month)	
Application frequency (per year, by month)	
Form of manure (liquid/solid)	
Method of Application	
Is manure broadcast, injected or incorporated?	
Frequency of Application (Annual, Biannual, ,etc?)	

d) The permittee will complete the *Nutrient Budget Worksheet*, below, for each crop grown on each field to which manure or process waste water is or may be applied during the first year of application. A copy of each Nutrient Budget Worksheet will be maintained on site, and a copy will be submitted to the Department.

	udget Worksheet		
Site/Field:	Map#5 Field #1		
	Nutrient Budget	Nitrogen-based	Phosphorus-based
2 000		Application	Application
	Crop Nutrient Needs, lbs/acre included in	11 /	
	Department Circular DEQ 9	55 lbs/Acre 40 lbs/Acre	-
(-)	Credits from previous legume crops,	1216	
	lbs/acre (from DEQ-9), as applicable	40 165/ACRE	
(-)	Residuals from past manure production,		
	lbs/acre (lbs/acre applied in previous		
	year(s) x fractions listed in DEQ-9)	0	
(-)	Nutrients supplied by commercial		
	fertilizer and Biosolids, lbs/acre	0	
(-)	Nutrients supplied in irrigation water,		
	lbs/acre	0	
	= Additional Nutrients Needed, lbs/acre	15 lbs/Acre	
	Total Nitrogen and Phosphorus in manure,		
	lbs/ton or lbs/1,000 gal (from manure test)	20 lbs/Acre	
<u>x)</u>	Nutrient Avalability factor (for Nitrogen		
)	based application see DEQ-9, below; for		
	Phosphorus based application use 1.0)	075	
	= Available Nutrients in Manure,	1. 1	
	lbs/ton or lbs/1,000 gal	15 lbs/Acre	
		7.2-3.4	
	Additional Nutrients needed, lbs/acre		
	(calculated above)	15 165/Acre	! !
(/)	Available Nutrients in Manure, lbs/ton or	15 lbs/Acre 15 lbs/Acre	
	lbs/1,000 gal (calculated above)	15 lbs/ACRE	-
	= Manure Application Rate, tons/acre	10.00/100	
	or 1,000 gal/acre	/Ton/Acre	
Comments:	02 2,000 g-12 to 2		
0111111	•		
		, -	
		•	

Land Application Data-Narrative approach

The following must be filled out <u>for each field</u> to which manure, litter or process wastewater will or may be applied for the period of the permit (5 years). Use as many sheets as necessary to fulfill this requirement. <u>Fields</u>

with identical crops and soil types may be grouped together.

Crops and Manure Field Name and spreadable acres for each (for fields v	with identical crops and soils type):
MAP#3 Field   Map#16a Field 2-4% slope (Old hayfield a we	st CPP)
Crop 1 (year 1 or ?) plant species	20% AIGHTA / 80% GRASS
Irrigated (Y/N)	No
Yield Goal (ton/ac or bushel/ac)	21/2 TONS 20 ppm
N Content of soil as nitrate (lbs/acre or ppm)	20 ppm
P Content of soil as P <sub>2</sub> O <sub>5</sub> (lbs/acre or ppm)	12 ppm
Time of Year When Application will Occur (month)	August
Application frequency (per year by month)	1 Armuni application in August
Form of manure (liquid/solid)	Solid
Method of Application	Sprinkling
Is manure incorporated or broadcast?	Brondenst
Frequency of Application (yearly, biannual, etc.?)	yenrly
Crop 2	
Irrigated (Y/N)	
Yield Goal (ton/ac or bushel/ac)	
N Content of soil as Nitrate (lbs/acre or ppm)	
P Content of soil as P <sub>2</sub> O <sub>5</sub> (lbs/acre or ppm)	
Time of Year When Application will Occur (month)	
Application frequency (per year, by month)	
Form of manure (liquid/solid)	
Method of Application	
Is manure broadcast, injected or incorporated?	
Frequency of Application (Annual, Biannual, ,etc?)	

d) The permittee will complete the *Nutrient Budget Worksheet*, below, for each crop grown on each field to which manure or process waste water is or may be applied during the first year of application. A copy of each Nutrient Budget Worksheet will be maintained on site, and a copy will be submitted to the Department.

Nutrient I	Budget Worksheet		
Site/Field:	: MAP# 3 Field   Map 16a Field	to Maptin Field	ls#23.4
	Nutrient Budget	Nitrogen-based Application	Phosphorus-based Application
	Crop Nutrient Needs, lbs/acre included in Department Circular DEQ 9	65 16s/Acre	
(-)	Credits from previous legume crops,	65 lbs/Acre 40 lbs/Acre	
	lbs/acre (from DEQ-9), as applicable	40 ibs packe	
(-)	Residuals from past manure production, lbs/acre (lbs/acre applied in previous year(s) x fractions listed in DEQ-9)	0	
(-)	Nutrients supplied by commercial fertilizer and Biosolids, lbs/acre	0	
(-)	Nutrients supplied in irrigation water, lbs/acre	0	
	= Additional Nutrients Needed, lbs/acre	25 lbs/ACRE	
			4.0
	Total Nitrogen and Phosphorus in manure, lbs/ton or lbs/1,000 gal (from manure test)	2016s/Tow	
(x)	Nutrient Avalability factor (for Nitrogen based application see DEQ-9, below; for Phosphorus based application use 1.0)	÷15	
	= Available Nutrients in Manure, lbs/ton or lbs/1,000 gal	15 lbs/ton	
	Additional Nutrients needed, lbs/acre (calculated above)	25 lbs/Acre	
(/)	Available Nutrients in Manure, lbs/ton or lbs/1,000 gal (calculated above)	25 lbs/ACRE 15 Tons/ACRE 167 Tons/ACRE	
	= Manure Application Rate, tons/acre or 1,000 gal/acre	1.67 Tons/ACRE	
Comments			

### Permittee Information:

This Form NMP must be completed, signed, and certified as follows:

- For a corporation, by a principal officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking

### All Permittees Must Complete the Following Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information; including the possibility of fine and imprisonment for knowing violations. [75-5-633, MCA]

A. Name (Type or Print)	
W. William Weeks, Square Butte Land & Cattle Com B. Title (Type or Print)	pany, LLC
	C. Phone No.
D. Signature	703 999-7569
$\mathcal{L}_{\mathcal{L}}}}}}}}}}$	E. Date Signed
Return the Form NMP, Nutrient Management Plan to:	12/23/11
Department of Environmental Occasion	

Department of Environmental Quality Water Protection Bureau PO Box 200901 Helena, MT 59620-0901 (406) 444-3080

RECEIVED

JAN 0 3 2012

DEQMPB

# Land Application Uata

D X	•	A C	*		V.	
	6 w C n 3	MAP#	MANUTE		Map # Fie 6 6 10 3 17 17 17 17	
No imigation o	6-4-6	Field#	Fraduction - 750 hed 750 x 69 x 170 dag		Field # Acres 9 29.14 9 29.14 8 85.97 2 163.55 1 72.1 1 9 34.57 4 49.82 1 149.56 2 39.55	
2			- 750 9 x 171		Current Crested Wheat Air	
any field	12.55 149.55 149.56 39.55	Total Rives	11 6		alfa  X #220 Tamaneen  X #220 Tamaneen  X #94  X #93 Fairfield	
in the fall	200 oc 200 oc	useable	165/day for 170 days @ 92% 1. 4398.75 Tons X:08 351.9 Tons Dry Matter Basis		Soil Type  I Judith Clay Loam  Danvers Clay Loam  Clay Loam  Clay Loam  Clay Loam  Clay Loam  Clay Loam  Danvers Clay Loam	
		,	Dry Matte		Slope 0-2% 0-2% 0-2% 0-2% 0-2% 0-2% 0-2% 0-2%	
s/id m			92% er Bas		Suggested Topdress D 60 lbs N 60 lbs N 30 lbs N	
Solid manuse			mosture		DM Manure/ Tons 2.29 2.29 1.15 1.15 1.15 1.15 1.15 1.15	
				594.48 tons	Total tons 66.41 196.87 57.5 40.25 21.85 39.1 23 115 34.5	

**A** 

### LABORATORY ANALYTICAL REPORT

B and C Ag

Client:

Consultants

Lab ID:

B11121735-001

Client Sample ID: Brad Schmitt 21896

Report Date:

01/03/12

Collection Date: Not Provided

Date Received:

12/20/11

### Manure Testing - CNMP Manure Package

Analyte	Dry Basis <u>mg/kg</u>	Percent	Received Mois	ture Basis pounds/ton
Moisture Solids	0.0	<b>22.9</b> 77.1		
Total Kjeldahl Nitrogen	12,900	0.99	9,946	19.9
Nitrate as N	<u>108</u>	<u>0.01</u>	<u>83</u>	<u>0.2</u>
Nitrogen, Total as N	13,008	<b>1.00</b>	10,029	20.1
Phosphorus, Total as P	.4,090	0.32	3,153	6.3
Phosphorus, as P <sub>2</sub> O <sub>6</sub>	9,366	<b>0.72</b>	<b>7,22</b> 1	14.4
Potassium, Total as K	12,600	0.97	9,715	19.4
Potassium, as K₂O	15,120	1.17	<b>11,656</b>	<b>23.3</b>

### NOTES:

To adjust to a different moisture, divide the current value by the percent dry matter (expressed as a decimal), then multiply by the desired percent dry matter (also expressed in a decimal). For example, total nitrogen was 80 pounds per ton at 50% moisture and the usual spreading moisture is 45%, 80 divided by 0.50 = 160 pounds of total nitrogen per dry ton of manure. Then multiply  $160 \times 0.55$  (% DM) = 88 total pounds of nitrogen per ton at 45% moisture.

For liquid or semi-liquid manure slurry you can calculate pounds per 1000 gallons by multiplying the pounds/ton concentration by 4.

mg/kg = ppm

### LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

**Cilent:** 

B and C Ag Consultants

Project: Lab ID:

Lewistown Propane B11121735-001

Client Sample 1D 21896

Brad Schmitt

Report Date: 01/03/12

Collection Date: Not Provided

DateReceived: 12/20/11 Matrix: Solid

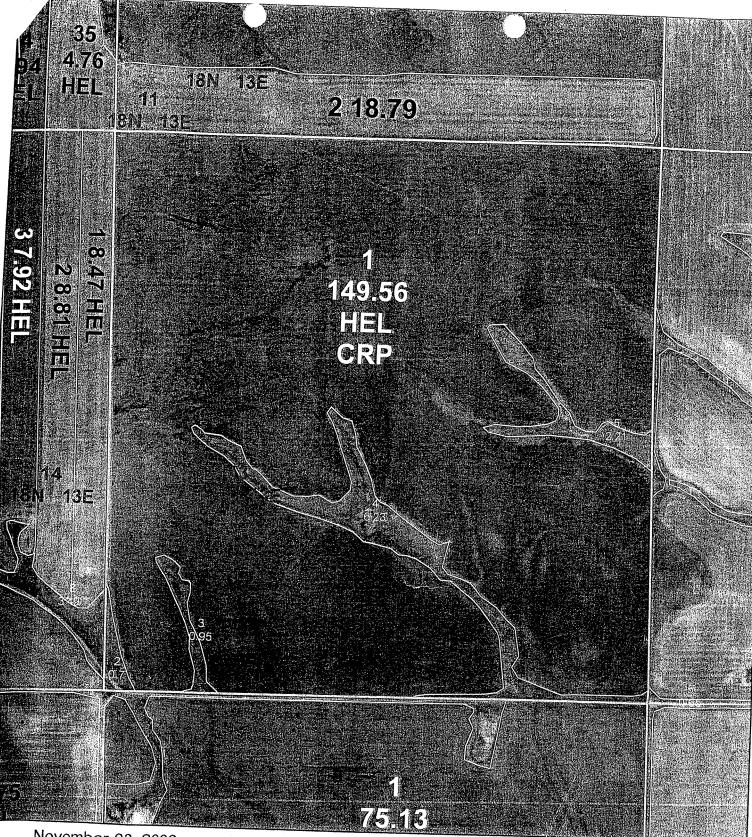
Analyses	Resul	Unite	Qualiflers	RL	MCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS Moisture (As Received)	22.9	w%		0.2		D2974	12/23/11 07:53 / srm
CHEMICAL CHARACTERISTICS Total Kjeldahl Nitrogen Nitrate as N, KCL Extract	12900 108	mg/kg mg/kg		10		ASA31-3 ASA33-8	12/28/11 10:11 / srm 12/29/11 11:14 / srm
METALS, TOTAL - EPA SW848 Phosphorus Polassium	4090 12600	mg/kg mg/kg		10 50		SW6010B SW6010B	12/28/11 09:57 / rih 12/28/11 09:57 / rih

Report Delinitione:

RL - Analyte reporting limit.

QCL - Quality control limit.

MCL - Maximum contaminant level. ND - Not detected at the reporting limit.



### Fergus County, MT

Farm - Tract 4618 - 4213 Map

**CROP YEAR 2008** 

Rangeland

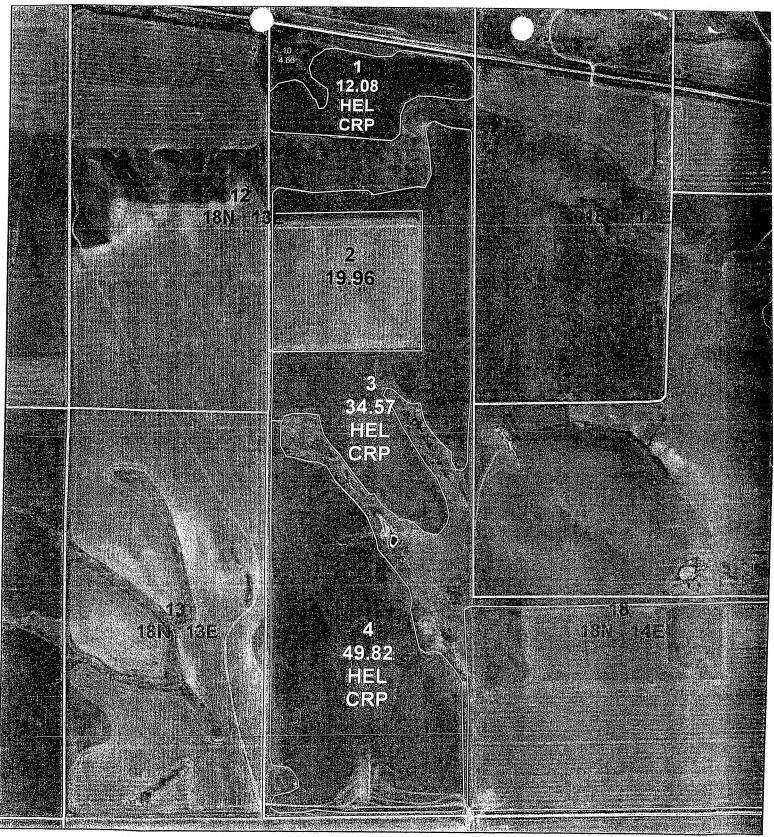


### USDA Farm Service Agency



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Disclaimer: Wetland identifiers do not represent the size, shape or specific determination of the area. Refer to your original determination (CPA-026 and attached maps) for exact wetland boundaries and determinations, or contact NRCS.



Date

### **County Name**

Farm - Tract

Grid:

**CROP YEAR 2008** 





### USDA Farm Service Agency



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### Fergus County, MT

Farm - Tract 4618 - 4239

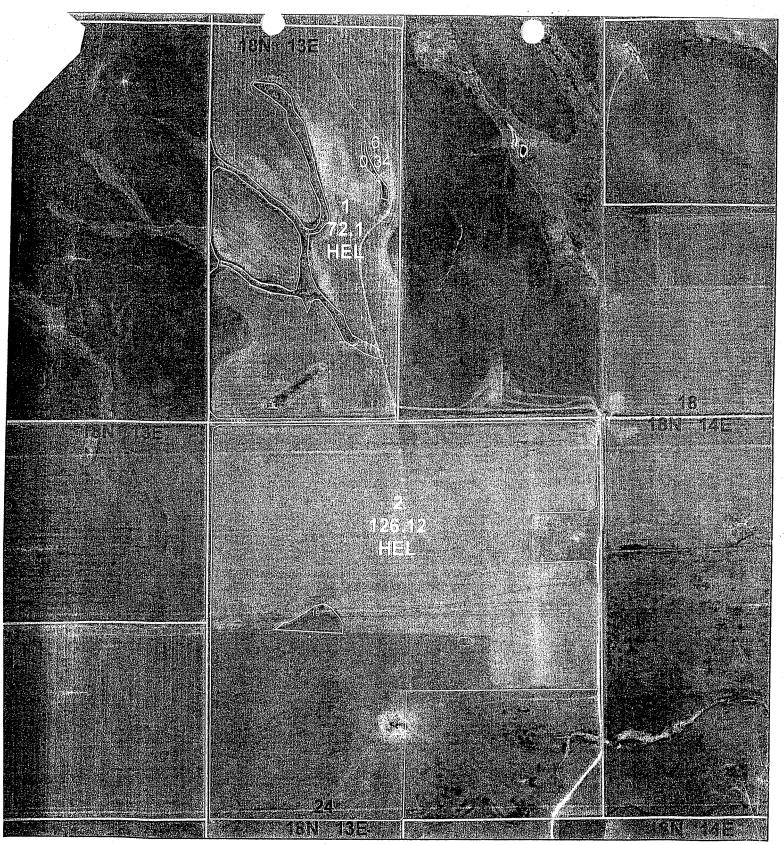
**CROP YEAR 2008** 



### **USDA** Farm Service Agency

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### Fergus County

Farm - Tract

4618 - 4212

**CROP YEAR 2008** 

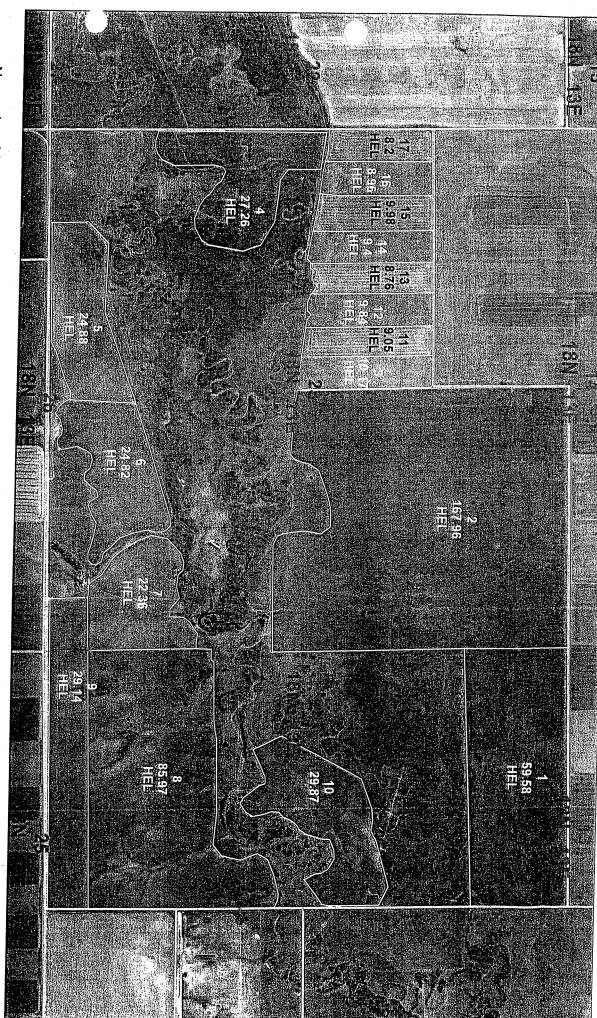


### USDA Farm Service Agency



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Farm - Tract 4618 - 4238

# Fergus County



Rangeland



Farm Service Agency



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Disclaimer: Wetland identifiers do not represent the size, shape or specific determination of the area. Refer to your original determination (CPA-026 and attached maps) for exact

Dec. / I.	11. M	B & C AG CONSULTAIN 249	( 1. L	
Date Recd:		P.O. Box 1184, 315 Sc th Street		
Date Sent:	2/21/11	Billings MT 59103-1184	Page 2	of 2
Profile#: 💉	A Commence of the Commence of	Dealer Lewistown Propane Denton		
Growe Brad Sc		Field: East of Shelter Belt A	cres:	anjumpajas .
Address: Gey	ser, MT	1 1610. Last or Constitution		

Addres	s: Gey	ser, Mi				•	, , , , , ,	East of 5h						
•					RESULT	- A-P- 57.	-ED 8/	NI AMA	I YSIS			Drylan	d	
rrigate	∍d						SO4-S	JIL WING	Lime	Soil pH	Salt	Na	PAW	
Lab No.	Depth	OM %	NO3-N ppm	NO3-N Ibs/ac	Phos. ppm	ppm	ppm	Text			Haz	meq		
,					42		5	L	M+	8.1	0.6		0.8	
62781	0-6	5.4	17	34	12		5	ī	M+				0.4	
62982	-20		3	. 14										
									······································		A CALL DE LA CALLED		1.2	
TOTAL				48		CA	Mg					Option I	Option II	Option II
Lab	Zinc	Iron	Copper	Min	Borin	ppm		Previous	Crop:	Grass		Option:	Option	
No.	ppm	ppm	ppm	ppm	ppm	- PPIII		Desired		Grass				
		- Allegan de Albande (Albande)						Anticipat				2	3	<u> </u>
					Na	CEC		1				100	150	
ab No.	Base	Ca %	Mg %	K %	%	CEC		Nitrogen	Requin	ed		100		
	sat	76	ļ					Subtract	avail. N	(2ft)(100	%)	50	50	ļ
		<u> </u>	ļ					Subtract	avail. N	1 (4ft)(40%	<b>6</b> )		<u> </u>	
			Mg	К	Na			1				40	40	
Lab No	meq 100	Ca %	%	%	%			Subtract						
		1		-		1		Subtract	N from	manure				<del> </del>
			1	1				1		t		į	1	1
								Subtract			•		<del>                                     </del>	
	ased Or	Water	1 +	- )X	100			Subtract	Others			·		
	ased Or	Water	( +	- )X	100			Subtract Add N fo	t Others or straw	tie up		·		
	ased Or	Water	( 4	- )X				Subtract Add N fo Add N fo	t Others or straw or Prote	tie up in Goal		40	60	
	ased Or	Water	4	- )X	100 100 100 100 100 100 100 100 100 100			Subtract Add N fo	t Others or straw or Prote or Sugge	tie up in Goal sted		10	60	
Yield B		Water		- )X		Phos	Add	Subtract Add N fo Add N fo Nitroger	t Others or straw or Prote or Sugge	tie up in Goal sted		<u> </u>		e call
		Water	Soil	Adeq N	Adďi	Phos	Add'l	Subtract Add N for Add N for Nitroger Phos	t Others or straw or Prote or Sugge	tie up in Goal		<u> </u>		e call
Yield B				Adeq N	Adďi	ppm	P205	Subtract Add N fo Add N fo Nitroger	t Others or straw or Prote or Sugge	tie up in Goalsted	any qu	estion		e call
Yield B	วก	] . N	Soil	Adeq N	Adďi		1	Subtract Add N for Add N for Nitroger Phos	t Others or straw or Prote or Sugge	tie up in Goal sted ou have a	any qu y or N	estion: Nike		e call
Yield B	วก	] . N	Soil	Adeq N	Adďi	ppm	P205	Subtract Add N for Add N for Nitroger Phos	t Others or straw or Prote or Sugge	tie up in Goal sted ou have a	any qu	estion: Nike		e call
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Production Bu/ac  Option Crop. G  N P2O5 K2O S Zn	T/ac T/ac T/ac T/ac Tass Suggested Iba/ac 10 25 30	N Req  Tillizer S  Yield G  Preplimi Topodress 25 25 0	Soil Avail N Suggeste	Adeq N to Produce	Add'i Req Optic Crop: N P2O5 K2O S	ppm 12   12   12   12   12   13   14   15   15   15   15   15   15   15	P205 25 tilizer S Yield C Preplant Topdress 60 30 30	Subtract Add N for Add N for Nitroger Phos Ibs/ac  Suggeste	t Others or straw or Prote Sugge If you	tie up in Goal_ sted  Ray 406  Optic Crop  N P205 K20 S Zn	y or N -259-	estion: //ike //ike //ike //ike //ike //ike //ike //ike //ike	suggeste	ed Drillad

Date Rec'd:	, rw
Date Sent:	12/21/11
Destile#	

Address: Geyser, MT

B& CAG CONSUI TAINO. 2497 F. 1

Billings MT 59103-1184

Page 1 of 2

Dealer Lewistown Propane Denton Growe Brad Schmitt

Field: East of Sale Barn

Acres:

irrigate	_				DEGIII T	SOFI	FFP S	OIL ANA	LYSIS			Drylan	a	
Lab	Depth	OM	NO3-N	NO3-N	Phos.	K	SO4-S	Text	Lime	Soil pH	Salt	Na	PAW	
No.	Debin	%	ppm	lbs/ac	ppm	ppm	ppm	IBAL			Haz	meq	^ 0	
962979	0-6	4.9	8	16	15		5	L	M+	8.1	0.6		0.8	
362980		710	4	8			5	L	M+				0.3	
302900	6.6.					COUNTY THE CONTRACTOR			-			<u> </u>		
		·				<u> </u>								
				24									1.1	
TOTAL			Copper	Mn Mn	Borin	CA	Wig			Hay 50%	Alf	Option I	Option II	Option
Lab No.	Zinc ppm	iron ppm	ppm	ppm	ppm	ppm	ppm	Previous	Crop:					
170.	ррии							Desired	Crop:	Hay 50%	Grass	Hay		-
							<u> </u>	Anticipat	e Yield	2T		2	2.5	
Lab No.	Base	Св	Mg	К	Na	CEC		Nitrogen	Denuire	ad		110	140	
LGD 145.	sat	. %	%	%	%						1021	25	25	
							<u> </u>	4		(2ft)(100		-		
								Subtract	avail. N	(4ft)(409	0)	-		
Lab No	meq	Ca	Mg	K %	Na %			Subtract	O.N rel	eased		40	40	
Labito	100	%	%	70				Subtract						
			<u> </u>				<u> </u>	Subtract				40	60	
					V 500	= 450	70#	Subtract						
Yield Ba	sed Or	Water	(2+	7 - )	) ( 500	= 400	J\J#+	Add N fo			AND DESCRIPTION OF THE PERSON			
								MUU IN IL	אום ווכונ	rie ab		1	·	
								4		n Gnal			1	
								Add N fo	or Protei			5	15	
				I Ada a N				Add N fo	or Protei Sugges	ited		5	<u> </u>	e call
Productio	Π	N	Soil	Adeq N	Add'I	Phos	Addil	Add N fo Nitrogen	or Protei Sugges	ited	any qu	5 estions	<u> </u>	e call
Production	n T/ac	N Req	Soil Avail N		Req	ppm	P205	Add N fo	or Protei Sugges	ited u have a	_	estions	<u> </u>	e call
			1	to	l .		1	Add N fo Nitrogen	or Protei Sugges	u have a	y or ¶	estions /like	<u> </u>	e call
Production Bu/ac	T/ac 2	Req	Avail N	to Produce	Req	ppm	P205	Add N fo Nitrogen	or Protei Sugges	u have a	_	estions /like	<u> </u>	e call
	T/ac	Req 110	Avail N 105	to Produce 2	Req 5 15	15	P205 25	Add N fo Nitrogen Phos lbs/ac	or Protei Sugges	ted u have a Ra 406	y or 1\ -259-	estions /like 5779	pleas	
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United States Department of Agriculture rarm Service Agency 18N 13E

## FSA Morita... Fergus County Indicated a county of the cou

2012

Farm: 4703

### Legend

- Restricted Use
- ▼ Limited Restrictions
- Exempt from Conserval Compliance Provisions
- CLU Field Boundary
- Rangeland/Forest
- Non Ag Use



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United States Department of Agriculture Farm Service Agency 34 Legend

### FSA Monta... Fergus County

2012

Farm: 4703

### Restricted Use

- Compliance Provisions
- CLU Field Boundary
  - Rangeland/Forest
- Non Ag Use



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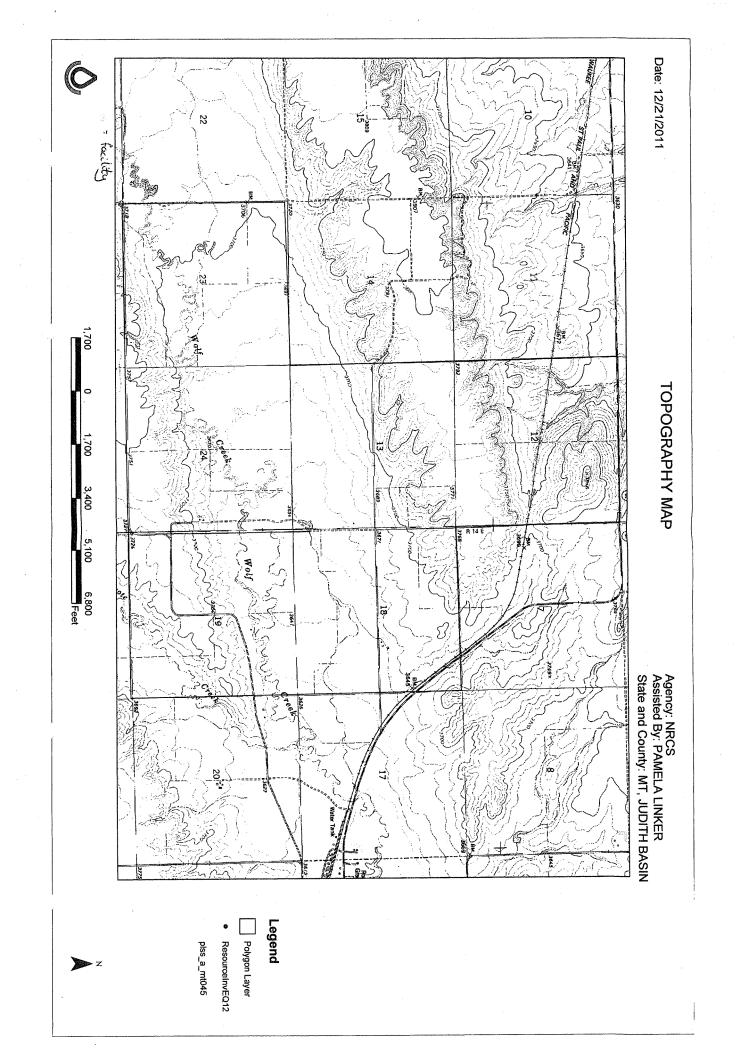
Date: 12/21/2011 District: JUDITH BASIN CONSERVATION DISTRICT

SOIL MAP

Field Office: STANFORD SERVICE CENTER Agency: NRCS
Assisted By: PAMELA LINKER
State and County: MT, JUDITH BASIN



Feet



# Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

similar soils	
Eltsac and	

Extent: about 25 percent of the unit	Soil loss tolerance (T factor): 3
Landform(s): hills, plains	Wind erodibility group (WEG): 4
Slope gradient: 15 to 45 percent	Wind erodibility index (WEI): 86
Parent material: clayey residuum over semiconsolidated shale Land capability class, nonirrigated:	Land capability class, nonirrigated: 7e
Restrictive feature(s): paralithic bedrock at 20 to 40 inches	Drainage class: well drained
Seasonal high water table: greater than 60 inches	Hydric soil: no
Flooding hazard: none	Hydrologic group: D
Ponding hazard: none	Potential frost action: low

Ecological site(s): Clayey (Cy) RRU 46-C 10-14" p.z.

Available water pH Kw Kf	0.5 to 0.7 in 7.4 to 8.4 .20 .20	2.0 to 2.4 in 6.6 to 8.4 .17 .17	2.1 to 2.4 in 6.6 to 8.4 .17 .17	0.0 to 0.0 in
Permeability c	slow 0.6	very slow 2.0	very slow 2.	impermeable 0.0
Texture	clay	clay	clay	unweathered bedrock
Representative soil profile:	A = 0 to 4 in	Bk - 4 to 21 in	C - 21 to 38 in	Cr 38 to 60 in

Minor Components
Norbert and similar soils: 5 percent of the unit
Lawther and similar soils: 5 percent of the unit

USDA Natural Resources

Date Media: 1211-11111
Date Senti 1221/11
Profile#: Address: Geyser, MT

B & C AG CONDULIAND.: Street
P.O. 80x 1184, 315 So. 21 Street
Billings MT 59103-1184 Page 2 of 2
Dealer Lewistown Propane Denton
Field: East of Shelter Belt
Acres:

14   34   34   34   34   34   34   34					RESULTS OF DEEP SOIL ANALTSIS	בבב								
17   34   12   5   L   Mr   8.1   0.6   0.8     3   14   2   5   L   Mr   8.1   0.5   0.8     3   14   2   5   L   Mr   8.1   0.5   0.8     3   14   2   5   L   Mr   8.1   0.5   0.8     48		1			Phos.	×	S04.S			Soil pH	TE S	2	2	
17   34   12   5   L   M+   8.1   0.6   0.8     3   14		5 %			E		Wdd	Text			7 <u>8</u>	Ē		
1	1			72	12		2	-	ŧ	8.1	9.0		8.0	
Add   Borin   CEC	2	*	•	3 3			2	_	÷				0.4	
1.2   1.2   1.2   1.2   1.2   1.3   1.4   1.2   1.3   1.3   1.3   1.4   1.2   1.3	ş		?	:		Ī								
Mag	T													
Nitrogen   Min   Borin   CA   Mg   Desired Crop: Grass   Crops   Cro	T			8									7.1	
Mag	juc.	ron	Copper	Ē	Borin	۲ ا ت		Dravin IS	Cup.	Grass		Option 1		
Main	E	mad	e da	mad	E DO	i i	<b>T</b>	Decipor	gu.	Grass				
Nitrogen Required   100   15					T		Ī	Anticipat	e Yield			7	2	
Wigger   National	9	a	g W	×	2	CEC				,		5	150	
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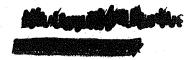
Page 1 of 2

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\* Additional maps will be sent to supplement.

# Soils Inventory Report



Map Unit Symbol	Acres	Percent
105	175.4	5%
107	310.1	8%
108	298.8	8%
110	3.9	0%
129	93.1	2%
133	127.5	3%
134	42.6	1%
152	10.4	0%
159	984.1	26%
197	75	2%
198	22.8	. 1%
220	123.8	3%
251	25.4	1%
270	353.3	9%
272	89.9	2%
273	277.7	7%
274	2.4	0%
275	119.4	3%
284	3.7	0%
37	55.2	1%
53	170.9	4%
54	8.4	0%
58	1.4	0%
67	81.3	2%
79	49.5	1%
93	152.7	4%
94	179.3	5%
98	7.6	0%
Total:	3845.6	100%

Application will only be on field in #270, #94, 9 #270; additional maps will be sent to supplement once manufe somple is returned.

Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

# 53--Daglum-Adger complex, 0 to 2 percent slopes

Mean annual precipitation: 15 to 19 inches
Mean annual temperature: 39 to 45 degrees F

Frost-free period: 110 to 125 days

#### Daglum and similar soils

Extent: about 60 percent of the unit

Landform(s): alluvial fans, stream terraces

Slope gradient: 0 to 2 percent

Parent material: clayey alluvium

Restrictive feature(s): none

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Land capability class, nonirrigated: 4s

Drainage class: moderately well drained

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Ecological site(s): Draft Silty (Si) RRU 46-C 13-19" p.z.

Representative soil profile:	Texture	Permeability	Available water capacity	рН	Kw	Kf
A 0 to 10 in	clay loam	moderate	1.6 to 1.8 in	5.6 to 7.3	.24	.24
Btn 10 to 17 in	clay	slow	0.9 to 1.0 in	6.1 to 9.0	.24	.24
Bknyz 17 to 60 in	clay	slow	5.1 to 6.0 in	7.9 to 9.0	.24	.24

#### Adger and similar soils

Extent: about 30 percent of the unit

Landform(s): alluvial fans, stream terraces

Slope gradient: 0 to 2 percent

Parent material: clayey alluvium

Restrictive feature(s): none

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

Land capability class, nonirrigated: 6s

Drainage class: moderately well drained

Hydric soil: no

Hydrologic group: D

Potential frost action: low

Ecological site(s): Dense Clay (DC) RRU 46-C 15-19" p.z.

Representative soil profile	Texture	Permeability	Available water capacity	рН	Kw	Kf
A 0 to 6 in	clay	slow	0.7 to 0.9 in	6.6 to 9.0	.24	.24
Btn 6 to 14 in	clay	very slow	0.7 to 0.9 in	7.9 to 9.0	.24	.24
Bknyz 14 to 60 in	clay	very slow	3.7 to 4.6 in	7.8 to 9.6	.28	.28

Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

#### **Minor Components**

Savage and similar soils: 5 percent of the unit Nobe and similar soils: 5 percent of the unit



Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

# 93--Fairfield-Danvers clay loams, 0 to 2 percent slopes

Mean annual precipitation: 15 to 19 inches

Mean annual temperature: 39 to 45 degrees F

Frost-free period: 110 to 125 days

#### Fairfield and similar soils

Extent: about 60 percent of the unit

Landform(s): terraces

Slope gradient: 0 to 2 percent

Parent material: loamy alluvium derived from limestone

Restrictive feature(s): none

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 6 Wind erodibility index (WEI): 48

Land capability class, nonirrigated: 3e

Drainage class: well drained

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Ecological site(s): Clayey (Cy) RRU 46-C 10-14" p.z.

Representative soil profile:	Texture	Permeability	Available water capacity	рН	Kw	Kf
A 0 to 6 in	clay loam	moderate	0.8 to 1.1 in	6.6 to 7.8	.24	.24
Bt 6 to 19 in	silty clay loam	moderately slow	1.7 to 2.2 in	6.6 to 8.4	.43	.43
Bk1 19 to 43 in	silty clay loam	moderately slow	3.1 to 4.1 in	7.9 to 8.4	.43	.43
2Bk2 43 to 60 in	very gravelly sandy loam	moderately rapid	1.2 to 1.4 in	7.9 to 9.0	.10	.24

#### Danvers and similar soils

Extent: about 30 percent of the unit

Landform(s): terraces

Slope gradient: 0 to 2 percent

Parent material: clayey alluvium derived from limestone

Restrictive feature(s): none

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Land capability class, nonirrigated: 3

Drainage class: well drained

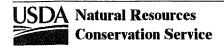
Hydric soil: no

Hydrologic group: C

Potential frost action: low

Ecological site(s): Clayey (Cy) RRU 46-C 10-14" p.z.

Representative soil profile:	Texture	Permeability	capacity	pН	Kw	Kf
A 0 to 4 in	clay loam	moderate	0.6 to 0.7 in	6.1 to 7.8	.24	.24
Bt 4 to 14 in	silty clay	slow	1.3 to 1.6 in	6.6 to 8.4	.32	.32
Bk 14 to 44 in	clay loam	slow	3.9 to 4.8 in	7.4 to 8.4	.28	.28
2C 44 to 60 in	gravelly clay loam	moderately slow	0.9 to 1.1 in	7.4 to 8.4	.17	.32



Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

# **Minor Components**

Judith and similar soils: 10 percent of the unit



Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

# 94--Fairfield-Danvers clay loams, 2 to 4 percent slopes

Mean annual precipitation: 15 to 19 inches
Mean annual temperature: 39 to 45 degrees F

Frost-free period: 110 to 125 days

#### Fairfield and similar soils

Extent: about 45 percent of the unit

Landform(s): terraces

Slope gradient: 2 to 4 percent

Parent material: loamy alluvium derived from limestone

Restrictive feature(s): none

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Land capability class, nonirrigated: 3e

Drainage class: well drained

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Ecological site(s): Clayey (Cy) RRU 46-C 10-14" p.z.

Representa	ativ	/e s	oil	profile.	Texture	Permeability	Available water capacity	рН	Kw	Kf
Α		0	to	6 in	clay loam	moderate	0.8 to 1.1 in	6.6 to 7.8	.24	.24
Bt		6	to	19 in	silty clay loam	moderately slow	1.7 to 2.2 in	6.6 to 8.4	.43	.43
Bk1		19	to	43 in	silty clay loam	moderately slow	3.1 to 4.1 in	7.9 to 8.4	.43	.43
2Bk2		43	to	60 in	very gravelly sandy loam	moderately rapid	1.2 to 1.4 in	7.9 to 9.0	.10	.24

#### Danvers and similar soils

Extent: about 40 percent of the unit

Landform(s): terraces

Slope gradient: 2 to 4 percent

Parent material: clayey alluvium derived from limestone

Restrictive feature(s): none

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Soil loss tolerance (T factor): 5 Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Land capability class, nonirrigated:

Drainage class: well drained

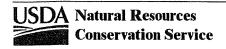
Hydric soil: no

Hydrologic group: C

Potential frost action: low

Ecological site(s): Clayey (Cy) RRU 46-C 10-14" p.z.

Representative soil profile	e: Texture	Permeability	Available water capacity	рH	Kw	Kf
A 0 to 4 in	clay loam	moderate	0.6 to 0.7 in	6.1 to 7.8	.24	.24
Bt 4 to 14 in	silty clay	slow	1.3 to 1.6 in	6.6 to 8.4	.32	.32
Bk 14 to 44 in	clay loam	slow	3.9 to 4.8 in	7.4 to 8.4	.28	.28
2C 44 to 60 in	gravelly clay loam	moderately slow	0.9 to 1.1 in	7.4 to 8.4	.17	.32

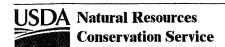


Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

# **Minor Components**

Judell and similar soils: 8 percent of the unit Judith and similar soils: 7 percent of the unit



Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

# 105--Fluvaquentic Haplaquolls, nearly level

Mean annual precipitation: 15 to 19 inches

Mean annual temperature:

Frost-free period: 110 to 125 days

Fluvaquentic haplaquolls and similar soils

Extent: about 90 percent of the unit

Landform(s): flood plains

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s): none

Seasonal high water table: greater than 60 inches

Flooding hazard: none Ponding hazard: none

Ecological site(s): ---

Soil loss tolerance (T factor):

Wind erodibility group (WEG): Wind erodibility index (WEI):

Land capability class, nonirrigated:

Drainage class:

Hydric soil: yes

Hydrologic group:

Potential frost action:

Representative soil profile:

Texture

Permeability

Available water capacity рН

Kw Kf

none

#### **Minor Components**

Well-drained soils: 10 percent of the unit

Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

# 107--Gerber clay loam, 0 to 2 percent slopes

Mean annual precipitation: 15 to 19 inches Mean annual temperature: 39 to 45 degrees F

Frost-free period: 110 to 125 days

#### Gerber and similar soils

Extent: about 90 percent of the unit

Landform(s): alluvial fans, stream terraces

Slope gradient: 0 to 2 percent

Parent material: clayey alluvium derived from shale

Restrictive feature(s): none

Seasonal high water table: greater than 60 inches

Flooding hazard: none Ponding hazard: none

Ecological site(s): Clayey (Cy) RRU 46-C 10-14" p.z.

Soil loss tolerance (T factor): 5 Wind erodibility group (WEG): 6 Wind erodibility index (WEI): 48

Land capability class, nonirrigated:

Drainage class: well drained

Hydric soil: no Hydrologic group: C

Potential frost action: low

Representative soil profile:	Texture	Permeability	Available water capacity	рН	Kw	Kf
A 0 to 5 in	clay loam	moderately slow	0.7 to 0.9 in	6.6 to 7.8	.24	.24
Bt 5 to 20 in	silty clay	slow	2.1 to 2.7 in	7.4 to 8.4	.24	.24
Bk 20 to 60 in	silty clay	slow	5.6 to 7.2 in	7.4 to 8.4	.32	.32

#### **Minor Components**

Gerber and similar soils: 10 percent of the unit

Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

# 108--Gerber clay loam, 2 to 4 percent slopes

Mean annual precipitation: 15 to 19 inches Mean annual temperature: 39 to 45 degrees F

Frost-free period: 110 to 125 days

#### Gerber and similar soils

Extent: about 85 percent of the unit

Landform(s): alluvial fans, stream terraces

Slope gradient: 2 to 4 percent

Parent material: clayey alluvium derived from shale

Restrictive feature(s): none

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Wind erodibility group (WEG): 6

Soil loss tolerance (T factor): 5

Wind erodibility index (WEI): 48

Land capability class, nonirrigated:

Drainage class: well drained

Hydric soil: no

Hydrologic group: C

Potential frost action: low

Ecological site(s): Clayey (Cy) RRU 46-C 10-14" p.z.

Representative soil profile:	Texture	Permeability	Available water capacity	рН	Kw	Kf
A 0 to 5 in	clay loam	moderately slow	0.7 to 0.9 in	6.6 to 7.8	.24	.24
Bt 5 to 20 in	silty clay	slow	2.1 to 2.7 in	7.4 to 8.4	.24	.24
Bk 20 to 60 in	silty clay	slow	5.6 to 7.2 in	7.4 to 8.4	.32	.32

#### Gerber and similar soils

Extent: about 15 percent of the unit

Landform(s): alluvial fans, stream terraces

Slope gradient: 0 to 4 percent

Parent material: clayey alluvium derived from shale

Restrictive feature(s): none

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Soil loss tolerance (T factor): 5 Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

Land capability class, nonirrigated:

Drainage class: well drained

Hydric soil: no

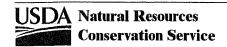
Hydrologic group: C

Potential frost action: low

Ecological site(s): Clayey (Cy) RRU 46-C 10-14" p.z.

Representative soil profile:	Texture	Permeability	Available water capacity	рН	Kw	Kf
A 0 to 5 in	silty clay	slow	0.7 to 0.9 in	6.6 to 7.8	.28	.28
Bt 5 to 20 in	silty clay	slow	2.1 to 2.7 in	7.4 to 8.4	.24	.24
Bk 20 to 60 in	silty clay	slow	5.6 to 7.2 in	7.4 to 8.4	.32	.32

#### **Minor Components**



Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

# 133--Judith-Windham gravelly clay loams, 2 to 8 percent slopes

Mean annual precipitation: 15 to 20 inches Mean annual temperature: 39 to 45 degrees F

Frost-free period: 90 to 125 days

#### Judith and similar soils

Extent: about 50 percent of the unit Landform(s): alluvial fans, terraces

Slope gradient: 2 to 8 percent

Parent material: alluvium derived from limestone

Restrictive feature(s): none

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Soil loss tolerance (T factor): 2 Wind erodibility group (WEG): 7 Wind erodibility index (WEI): 38

Land capability class, nonirrigated:

Drainage class: well drained

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Ecological site(s): Clayey (Cy) RRU 46-C 10-14" p.z.

Representative soil profile:	Texture	Permeability	Available water capacity	pН	Kw	Kf
A 0 to 6 in	gravelly clay loam	moderate	0.7 to 0.8 in	7.4 to 8.4	.10	.20
Bk1 6 to 24 in	gravelly clay loam	moderate	2.2 to 2.5 in	7.9 to 8.4	.15	.32
2Bk2 24 to 66 in	extremely gravelly sandy clay loam	moderately rapid	2.5 to 3.4 in	7.9 to 8.4	.05	.24

#### Windham and similar soils

Extent: about 40 percent of the unit Landform(s): alluvial fans, terraces

Slope gradient: 2 to 8 percent

Parent material: alluvium derived from limestone

Restrictive feature(s): none

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Ecological site(s): Silty-Limy (SiLy) 15-19" p.z.

Soil loss tolerance (T factor): 2 Wind erodibility group (WEG): 5 Wind erodibility index (WEI): 56

Land capability class, nonirrigated: 6s

Drainage class: well drained

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Available water Texture Permeability рН Representative soil profile: Kw Κf capacity Α --0 to 6 in gravelly clay loam 0.7 to 0.8 in 7.4 to 8.4 moderate .10 .20 6 to 12 in Bk1 -gravelly clay loam moderate 0.5 to 0.7 in 7.9 to 8.4 .15 .28 Bk2 -- 12 to 18 in extremely gravelly loam moderate 0.2 to 0.3 in 7.9 to 8.4 .05 .32 Bk3 -- 18 to 60 in extremely gravelly loam moderate 1.3 to 1.7 in 7.9 to 8.4 .05 .32

Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

# **Minor Components**

Judith and similar soils: 5 percent of the unit Windham and similar soils: 5 percent of the unit



Fergus County, Montana

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# 159--Marcott silty clay loam

Mean annual precipitation: 15 to 20 inches

Mean annual temperature: 39 to 45 degrees F

Frost-free period: 90 to 125 days

#### Marcott and similar soils

Extent: about 90 percent of the unit

Landform(s): flood plains

Slope gradient: 0 to 2 percent

Parent material: clayey alluvium

Restrictive feature(s): none

Seasonal high water table: approximately 30 inches

Flooding hazard: rare

Ponding hazard: none

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Land capability class, nonirrigated: 4w

Drainage class: somewhat poorly drained

Hydric soil: no

Hydrologic group: D

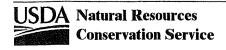
Potential frost action: high

Ecological site(s): Draft Subirrigated (Sb) RRU 46-C 13-19" p.z.

Representative soil profile:	Texture	Permeability	Available water capacity	pН	Kw	Kf
A 0 to 8 in	silty clay loam	moderately slow	1.1 to 1.3 in	6.6 to 8.4	.32	.32
Bw 8 to 25 in	silty clay	slow	2.3 to 2.8 in	7.4 to 8.4	.32	.32
Bk 25 to 42 in	silty clay	slow	2.2 to 2.7 in	7.4 to 8.4	.32	.32
2Cg 42 to 66 in	extremely gravelly sandy clay loam	moderately rapid	1.7 to 1.9 in	7.4 to 8.4	.02	.24

#### **Minor Components**

Marcott and similar soils: 5 percent of the unit Sudworth and similar soils: 5 percent of the unit



Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

# 220--Tamaneen-Judith clay loams, 0 to 2 percent slopes

Mean annual precipitation: 15 to 19 inches
Mean annual temperature: 39 to 45 degrees F

Frost-free period: 90 to 125 days

#### Tamaneen and similar soils

Extent: about 60 percent of the unit

Landform(s): alluvial fans, stream terraces

Slope gradient: 0 to 2 percent

Parent material: alluvium derived from limestone

Restrictive feature(s): none

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 6 Wind erodibility index (WEI): 48

Land capability class, nonirrigated: 3e

Drainage class: well drained

Hydric soil: no

Hydrologic group: C

Potential frost action: moderate

Ecological site(s): Clayey (Cy) RRU 46-C 10-14" p.z.

Representative soil profile	Texture	Permeability	Available water capacity	рН	Kw	Kf
A 0 to 7 in	clay loam	moderate	1.1 to 1.2 in	6.6 to 7.8	.24	.24
Bt 7 to 13 in	silty clay	moderately slow	0.8 to 0.9 in	6.6 to 7.8	.28	.28
Bk1 13 to 17 in	clay loam	moderately slow	0.6 to 0.6 in	7.4 to 8.4	.24	.24
Bk2 17 to 22 in	very gravelly loam	moderate	0.5 to 0.6 in	7.9 to 8.4	.15	.32
2C 22 to 66 in	extremely gravelly sandy loam	moderately rapid	1.8 to 2.2 in	7.9 to 8.4	.05	.20

#### Judith and similar soils

Extent: about 30 percent of the unit Landform(s): alluvial fans, terraces

Slope gradient: 0 to 2 percent

Parent material: alluvium derived from limestone

Restrictive feature(s): none

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Land capability class, nonirrigated: 3e

Drainage class: well drained

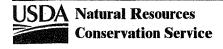
Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Ecological site(s): Clayey (Cy) RRU 46-C 10-14" p.z.

Representative soil profit	e: Texture	Permeability	Available water capacity	pН	Kw	Kf
A 0 to 6 in	clay toam	moderate	0.9 to 1.2 in	7.4 to 8.4	.20	.20
Bk1 6 to 24 in	clay loam	moderate	2.2 to 2.5 in	7.9 to 8.4	.32	.32
2Bk2 24 to 66 in	extremely gravelly sandy clay loam	moderately rapid	2.5 to 3.4 in	7.9 to 8.4	.05	.24

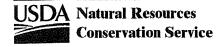


Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

# **Minor Components**

Windham and similar soils: 10 percent of the unit



Fergus County, Montana

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# 270--Win ifred clay loam, 2 to 8 percent slopes

Mean annual precipitation: 15 to 19 inches
Mean annual temperature: 39 to 45 degrees F

Frost-free period: 110 to 125 days

#### Winifred and similar soils

Extent: about 90 percent of the unit

Landform(s): plains

Slope gradient: 2 to 8 percent

Parent material: alluvium and/or residuum over

semiconsolidated shale

Restrictive feature(s): paralithic bedrock at 20 to 40 inches

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Ecological site(s): Clayey (Cy) RRU 46-C 10-14" p.z.

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 6 Wind erodibility index (WEI): 48

Land capability class, nonirrigated: 3e

Drainage class: well drained

Hydric soil: no

Hydrologic group: D

Potential frost action: low

Representative soil profile:	Texture	Permeability	Available water capacity	рН	Kw	Kf
A 0 to 3 in	clay loam	moderately slow	0.4 to 0.6 in	6.6 to 7.8	.28	.28
Bw 3 to 14 in	silty clay	slow	1.4 to 1.9 in	7.4 to 8.4	.32	.32
Bk 14 to 32 in	clay	slow	2.3 to 3.0 in	7.4 to 8.4	.28	.28
Cr 32 to 60 in	unweathered bedrock	impermeable	0.0 to 0.0 in			

#### **Minor Components**

Judith and similar soils: 5 percent of the unit Linwell and similar soils: 5 percent of the unit



Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

# 273--Winifred-Judith clay loams, 8 to 15 percent slopes

Mean annual precipitation: 15 to 19 inches Mean annual temperature: 39 to 45 degrees F

Frost-free period: 90 to 125 days

#### Winifred and similar soils

Extent: about 50 percent of the unit

Landform(s): hills, plains

Slope gradient: 8 to 15 percent

Parent material: alluvium and/or residuum over

semiconsolidated shale

Restrictive feature(s): paralithic bedrock at 20 to 40 inches

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Ecological site(s): Clayey (Cy) RRU 46-C 10-14" p.z.

Soil loss tolerance (T factor): 3 Wind erodibility group (WEG): 6 Wind erodibility index (WEI): 48

Land capability class, nonirrigated: 4e

| Available water |

Drainage class: well drained

Hydric soil: no Hydrologic group: D Potential frost action: low

Representative soil profile:	Texture	Permeability	capacity	pН	Kw	Kf	
A 0 to 3 in	clay loam	moderately slow	0.4 to 0.6 in	6.6 to 7.8	.28	.28	
Bw 3 to 14 in	silty clay	slow	1.4 to 1.9 in	7.4 to 8.4	.32	.32	
Bk 14 to 32 in	clay	slow	2.3 to 3.0 in	7.4 to 8.4	.28	.28	
Cr 32 to 60 in	unweathered bedrock	impermeable	0.0 to 0.0 in				

#### Judith and similar soils

Extent: about 25 percent of the unit Landform(s): alluvial fans, terraces Slope gradient: 8 to 15 percent

Parent material: alluvium derived from limestone

Restrictive feature(s): none

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Hydrologic group: B

Potential frost action: moderate

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

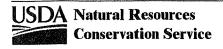
Drainage class: well drained

Hydric soil: no

Land capability class, nonirrigated:

Ecological site(s): Clayey (Cy) RRU 46-C 10-14" p.z.

Representative soil profile:	Texture	Permeability	Available water capacity	рН	Kw	Kf
A 0 to 6 in	clay loam	moderate	0.9 to 1.2 in	7.4 to 8.4	.20	.20
Bk1 6 to 24 in	clay loam	moderate	2.2 to 2.5 in	7.9 to 8.4	.32	.32
2Bk2 24 to 66 in	extremely gravelly sandy clay loam	moderately rapid	2.5 to 3.4 in	7.9 to 8.4	.05	.24

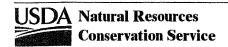


Fergus County, Montana

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# **Minor Components**

Judith and similar soils: 9 percent of the unit Windham and similar soils: 8 percent of the unit Linwell and similar soils: 8 percent of the unit



Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

# 275--Winifred-Windham-Eltsac complex, 15 to 45 percent slopes

Mean annual precipitation: 15 to 19 inches

Mean annual temperature: 39 to 45 degrees F

Frost-free period: 110 to 125 days

#### Winifred and similar soils

Extent: about 40 percent of the unit

Landform(s): hills, plains

Slope gradient: 15 to 45 percent

Parent material: alluvium and/or residuum over

semiconsolidated shale

Restrictive feature(s): paralithic bedrock at 20 to 40 inches

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Ecological site(s): Clayey (Cy) RRU 46-C 10-14" p.z.

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48

Land capability class, nonirrigated: 7e

Drainage class: well drained

Hydric soil: no
Hydrologic group: D
Potential frost action: low

Representative soil profile:	Texture	Permeability	capacity	рН	Kw	Kf
A 0 to 3 in	clay loam	moderately slow	0.4 to 0.6 in	6.6 to 7.8	.28	.28
Bw 3 to 14 in	silty clay	slow	1.4 to 1.9 in	7.4 to 8.4	.32	.32
Bk 14 to 32 in	clay	slow	2.3 to 3.0 in	7.4 to 8.4	.28	.28
Cr 32 to 60 in	unweathered bedrock	impermeable	0.0 to 0.0 in			

#### Windham and similar soils

Extent: about 25 percent of the unit

Landform(s): terraces

Slope gradient: 15 to 45 percent

Parent material: alluvium derived from limestone

Restrictive feature(s): none

Seasonal high water table: greater than 60 inches

Flooding hazard: none

Ponding hazard: none

Ecological site(s): Silty-Limy (SiLy) 15-19" p.z.

Soil loss tolerance (T factor): 2 Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48
Land capability class, nonirrigated: 7e

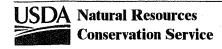
Drainage class: well drained

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Representative soil profile:	Texture	Permeability	capacity	pН	Kw	Kf
A 0 to 6 in	very gravelly loam	moderate	0.7 to 0.8 in	7.4 to 8.4	.10	.28
Bk1 6 to 12 in	gravelly clay loam	moderate	0.5 to 0.7 in	7.9 to 8.4	.17	.32
Bk2 12 to 18 in	extremely gravelly loam	moderate	0.2 to 0.3 in	7.9 to 8.4	.05	.32
Bk3 18 to 60 in	extremely gravelly loam	moderate	1.3 to 1.7 in	7.9 to 8.4	.05	.32



#### Fergus County, Montana

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation.]

#### Eltsac and similar soils

Extent: about 25 percent of the unit

Landform(s): hills, plains

Slope gradient: 15 to 45 percent

Parent material: clayey residuum over semiconsolidated shale

Restrictive feature(s): paralithic bedrock at 20 to 40 inches

Seasonal high water table: greater than 60 inches

Flooding hazard: none

-1000ing nazaru. none

Ponding hazard: none

Soil loss tolerance (T factor): 3 Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

Land capability class, nonirrigated: 7e

Drainage class: well drained

Hydric soil: no

Hydrologic group: D

Potential frost action: low

Ecological site(s): Clayey (Cy) RRU 46-C 10-14" p.z.

Representative soil profile:	Texture	Permeability	Available water capacity	рН	Kw	Kf
A 0 to 4 in	clay	slow	0.6 to 0.7 in	7.4 to 8.4	.20	.20
Bk 4 to 21 in	clay	very slow	2.0 to 2.4 in	6.6 to 8.4	.17	.17
C 21 to 38 in	clay	very slow	2.1 to 2.4 in	6.6 to 8.4	.17	.17
Cr 38 to 60 in	unweathered bedrock	impermeable	0.0 to 0.0 in			

#### **Minor Components**

Norbert and similar soils: 5 percent of the unit Lawther and similar soils: 5 percent of the unit

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Zn

Fe

Cu

Mn

Zn

Fe

Cu

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Address: Geyser, MT

B& C AG CONSULTARY

P.O. Box 1184, 315 So. 2( ) itreet

Billings MT 59103-1184

Page 2 of 2

Dealer Lewistown Propane Denton

- Acres: Field: East of Shelter Belt

Zn

Fe

Cu

Mn

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Growe Brad	Schmitt

Address: Geyser, MT

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P.O. Box 1184, 315 So. 1 Street

Billings MT 59103-1184

Page 1 of 2

Dealer Lewistown Propane Denton

Field: East of Sale Barn

Acres:

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